P069-f

Proposition d'un arbre décisionnel diagnostique et thérapeutique dans la prise en charge du stiff-knee chez le patient neurologique

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Mots clés : Marche ; Hémiplégie ; Genou raide ; Toxine botulique

Introduction.– Le stiff-knee est un défaut de raccourcissement du membre inférieur à la marche, secondaire à un défaut de flexion du genou lors de la phase oscillante. C'est une situation clinique fréquente, notamment chez l'hémiplégique, qui a fait l'objet de nombreux travaux dans la littérature. Il n'existe cependant pas de consensus sur la démarche diagnostique et thérapeutique. Nous proposons un arbre décisionnel diagnostique et thérapeutique développé à partir des données de la littérature et de l'expérience du service de MPR du CHU de Toulouse.

Matériel et méthode.– Certains éléments cliniques clés doivent être relevés, tels que la force du quadriceps, des fléchisseurs de hanche et du genou et du triceps sural. La spasticité du quadriceps doit être analysée hanche fléchie et tendue (droit fémoral). La compensation d'un déficit du psoas par le droit fémoral en tant que fléchisseur de hanche doit être identifiée. Un trouble proprioceptif éventuel doit être éliminé. Enfin, la vitesse de marche du sujet, la présence d'un equin dynamique ou d'un recurvatum de genou doivent être intégrés au raisonnement. L'approche clinique peut être complétée par la réalisation de blocs moteurs sélectifs ou d'une analyse quantifiée de la marche pour préciser la physiopathologie du stiff-knee, et orienter le traitement.

Résultats.– L'attitude thérapeutique découle des mécanismes physiopathologiques identifiés. La kinésithérapie est indiquée, notamment pour effectuer un travail sur le schéma de marche de manière spécifique et intensive après injections de toxine botulique. Les injections de toxine botulique ne sont pas systématiques, et concernent le droit fémoral et/ou les vastes. Un défaut de raccourcissement distal en phase oscillante (equin) ou des anomalies en phase d'appui (equin, recurvatum de genou) doivent être pris en charge de manière concomitante afin d'optimiser l'amélioration du schéma de marche.

Conclusion.– Cet arbre décisionnel diagnostique et thérapeutique sera soumis à un comité d'experts et évalué de façon prospective pour juger de sa validité.

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English version

P061-e

Effective results with botulinum toxin in adults with cerebral palsy

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Keywords: Cerebral palsy botulinum toxin spasticity

Objective.– We estimated the effects of the botulinum toxin A in a population of adult patients with cerebral palsy and spastic tetraparesia. For these patients, the objectives were to improve comfort, posture possibilities, hygiene, and pain relief.

Method.– A population of 20 adult cerebral palsy patients with poor spasticity control despite combination therapy using maximal dose lioresal and either dantrolene or valium were treated by botulinum toxin at the main joint limitations. The most frequent limitations of these patients were in decreasing order: permanent wrist flexion, permanent knee flexion, permanent elbow flexion, shoulder hypoabduction, permanent hip flexion, candlestick shoulders, thigh adduction, and claw hands.

Results.– The average age of our patients was 39.5 years, their weight was 42.4 kg, and the M/F sex ratio was 14/6. Aetiologies of cerebral palsy were perinatal anoxia ($n = 6$), post-infectious encephalitis ($n = 4$), sequelas of prematurity ($n = 3$), undetermined cause ($n = 3$), epileptic encephalopathia ($n = 2$), Reye's syndrome ($n = 1$), Engelmann syndrome ($n = 1$). The average Ashworth score improved from 0.62, gain in joint range of motion were as follows: wrist flexion 44.4°, knees flexion +26.5°, elbow flexion +31.7°, shoulder adduction +42.8°, candlestick shoulder +108.7°, hip flexion +25°, thigh adduction thigh 46.5° and claw hands +56°.

Discussion.– Only few studies are available on management of spasticity with botulinum toxin in adults with cerebral palsy. We demonstrate here that despite longstanding joint limitations, botulinum toxin can provide significant improvement.

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P062-e

Study of clinical and BoNT-A injection profiles of adult patients in France suffering from upper limb spasticity

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Keywords: ULS; BoNT-A; Dysport; Botox

Objective.– The aim of this study was to document the clinical and BoNT-A injection profiles of adult patients suffering from upper limb spasticity (ULS) in France.

Methods.– Patient data was collected by physicians by means of a questionnaire on the day of a planned injection with BoNT-A for adult patients suffering from ULS.

Results.– Data from 141 patients (58% male, 42% female), with ULS caused mainly by acquired brain injury (stroke-infarction; 41%, stroke-hemorrhage; 19%), suffering from ULS for more than 12 months (91%) with lesions stabilized (93%) at the start of the study were analysed. All but one patient had a motor deficit and half had a sensory deficit. The most frequent motor impairment was hemiparesis (75%). Evaluation was mainly using the ROM or MAS methods (around 90%).

Three quarter of patients had previously received a BoNT-A injection and 65% had been treated for more than 1 year. More patients received Dysport (58%) than Botox (42%).

Overall, main target muscles injected were flexor muscles in the forearm (*flexor digitorum superficialis*; 77%, *flexor carpi radialis*; 53%, *flexor digitorum profundus*; 43%) and in the arm (*brachialis*; 46% and *biceps brachii*; 30%). The trend was similar for both BoNT-A preparations, except Dysport was injected more frequently in the *flexor digitorum superficialis* muscle (81%) than Botox (71%).

The highest median number of injection points by muscle ($n > 10$ patients) was 3 for interossei dorsales (max = 6) then 2 for all the cited most frequently injected muscles, and pectoralis major and flexor carpi ulnari.

The range of number of units injected by muscle was 10–150 units for Botox (range total units injected: 30–350) and 25–400 units for Dysport (range total units injected: 100–1450). The muscles with the highest median number of units injected ($n > 10$ patients) were similar for both BoNT-A: *pectoralis major*, *biceps brachii*, *brachialis* and *flexor digitorum superficialis* (50 units) for Botox and *biceps brachii* (200 units), *pectoralis major* (155 units) then *brachialis*, *flexor digitorum superficialis* and *flexor carpi radialis* (150 units) for Dysport.

Discussion.– This study compiles valuable data which can be used to identify and target the ULS patients most likely to benefit from BoNT-A treatment.

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P063-e

Gait study in hemiplegic patients: Role of spasticity on baropodometric parameters

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Keywords: Hemiparetic; Gait analysis; Spasticity, Nerve block; COP

A study was conducted to evaluate the effect of treatment on triceps surae spasticity in hemiparetic patients using a quantitative and reproducible parameter: the anterior-posterior path length of the center of pressure (COP). The F-Scan system used the embedded footings to analyze the path of the COP and the plantar pressure during walking.

COP parameters have a good repeatability in hemiparetic patients [1].

The population consisted of 10 hemiparetic patients (six left, four right), with disturbing spasticity of the triceps surae during ambulation, able to walk alone with or without technical assistance (FAC functional scale between 3 and 5). After clinical examination, walking study was achieved at own speed (with or without technical assistance), before and after an anesthesic block of the posterior tibial nerve. The session comprised of baropodometric, spatiotemporal recordings, and a videographic survey.

The main variable analyzed was the change of anterior-posterior path length of the COP (AP) in hemiparetic side after completion of the nerve block.

According to literature, a significant decrease in the AP in paretic side compared to the non-paretic side was found before the nerve block [2]. AP increased significantly after completion of the nerve block (112 vs 99 mm, $P = 0.03$).

In conclusion, we find a significant variation of a quantitative variable of gait in hemiparetic patients after abolition of spasticity.

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P064-e

Intrathecal baclofen for spasticity management: A comparative analysis of complications in a series of 88 pumps for adults and children

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Keywords: Spasticity; Baclofen; Complication; Cerebral palsy

Objective.– To examine differences in complication rates between children and adults treated by intrathecal baclofen.

Material and method.– Retrospective chart review of 73 patients (adults and children; 88 pumps) with a diagnosis of severe spasticity requiring intrathecal baclofen therapy.

Results.– Complication rates by category were as follows: related to human error: 8%, related to baclofen: 11%, related to surgery: 19% and related to the implantable device: 27%. Complications were more frequent in adults than in children, except for complications related to surgery. The complication rate related to the implantable device was higher in ambulatory patients. The complication rates related to surgery and the implantable device decreased during the course of the study.

Conclusions.– The overall complication rate observed in our series is comparable to that reported in the literature and, in contrast with the literature, was not higher in children than in adults. Only complications related to the surgical procedure were slightly more common in children. Baclofen pump implantation in children is therefore a safe procedure.

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P065-e

The contribution of anaesthetic blocks in the evaluation of spastic patients

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Keywords: Spasticity; Assessment; Anesthetic blocks

Introduction.– The anesthetic blocks are currently in the arsenal of diagnostic and therapeutic motor disorders associated with spasticity.

The aim of our study is to clarify the interest of the anesthetic block in patient assessment spastic.

Patients and methods.– Twenty patients hospitalized in the physical medicine and functional rehabilitation were selected over a period of 2 years (since January 2010) and who received anesthetic block during their hospitalization. These were patients aged between 13 and 72 years (mean age 43 years) with vascular hemiplegia in 12 cases (60%), cerebral palsy in three cases (15%), spinal cord injury in three cases (15%), head trauma in 1 case (5%) and a hereditary disease in one case (5%).

The anesthetic blocks were performed by specific needles and a pacemaker, respecting the location techniques. The anaesthetic used was mainly 2% non-adrenalized etidocaine (Xylocaïne®) An analytical assessment of spasticity by the Ashworth score and functional walking was performed for each patient.

Results.– Twenty anesthetic blocks were performed. The injected sites were dominated by the soleus nerve (48%), the median nerve (33%) and the posterior tibial nerve (11%).

We noted an Ashworth score gain of about 1 to 2 points, a gain of 13° joint and an average improvement of gait in 11 patients (64%).

Fifteen patients (75%) benefited from an injection of botulinum toxin and one patient was operated (neurotomy).

Conclusion.– The anesthetic blocks currently represent a simple and effective approach with a dual interest in diagnosis and prognosis.

They are shown to reproduce the transient effect expected a more sustainable and therefore more costly by providing an effective local treatment of spasticity.

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P066-e

Extensor truncal dystonia with spondylolysis: Interest of botulinum toxin in the spinal muscles for pain relief

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Keywords: Truncal dystonia; Spondylolysis; Low-back pain; Botulinum toxin

Introduction.– Primary and secondary dystonia with truncal dystonia are often associated with spinal involvement as low-back pain. Interest of botulinum toxin is well described in literature for cervical dystonia but less for truncal dystonia. We report the case of a patient who received local botulinum toxin